A.D. 1873, 29th SEPTEMBER. N° 3167.

SPECIFICATION

OF

ALEXANDER MELVILLE CLARK.

PLATES FOR TAKING THE SHAPE OR PROFILE OF THE HEAD.

LONDON:
PRINTED BY GEORGE E. EYRE AND WILLIAM SPOTTISWOODE,
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1874.

A.D. 1873, 29*th* SEPTEMBER. N° 3167.

Apparatus for Taking the Shape or Profile of the Head.

LETTERS PATENT to Alexander Melville Clark, of 53, Chancery Lane, in the County of Middlesex, Patent Agent, for the Invention of "IMPROVED APPARATUS FOR TAKING THE SHAPE OR PROFILE OF THE HEAD AND OTHER PARTS OF THE HUMAN FRAME, AND FOR REPRODUCING OTHER CURVED OR IRREGULAR OUTLINES."—A communication from abroad by André Dragué, of Lyons, France.

Sealed the 10th March 1874, and dated the 29th September 1873.

PROVISIONAL SPECIFICATION left by the said Alexander Melville Clark at the Office of the Commissioners of Patents, with his Petition, on the 29th September 1873.

I, ALEXANDER MELVILLE CLARK, of 53, Chancery Lane, in the County of Middlesex, Patent Agent, do hereby declare the nature of the said Invention for "IMPROVED APPARATUS FOR TAKING THE SHAPE OR PROFILE OF THE HEAD AND OTHER PARTS OF THE HUMAN FRAME, AND FOR REPRODUCING OTHER CURVED OR IRREGULAR OUTLINES," to be as follows:—

This Invention relates to improved apparatus consisting of a mechanical templet for reproducing the configuration or profiles of all kinds of

objects having irregular surfaces, either sunk or in relief, such as statuary and ornamental sculpture, or for taking patterns or shapes of different parts of the human frame, and various other analogous purposes without the necessity of moulding as hitherto.

The apparatus consists of a number of adjustable spring pins or rods fitted in a suitable box or frame of straight, curved, or other form from the surface of which they project. Each pin is pressed outwards by a spring, and when applied on the surface to be reproduced the pins are compressed more or less into the box, and adapt themselves to the said surface, so that on removing the apparatus (the pins having been previously secured in position) an exact counterpart of the surface or contour of the object will be formed by the ends of the pins, which may be retained any length of time in position for future use.

I have illustrated the Invention in the accompanying Drawing, Figure 1 of which shows one form of apparatus suitable for reproducing curved outlines and surfaces in relief, consisting of a box of straight form with any convenient number of projecting pins, each provided with an independent spring.

Figure 2 shows a similar apparatus in which one spring only is used for a series of several pins, or the whole of the pins may be acted on by the same spring.

Figure 3 shows a section of an ornamental moulding, and the manner of gauging the profile of same by means of the apparatus.

Figure 4 shows the apparatus made in two parts, jointed together for gauging a concave moulding.

Figure 5 shows the apparatus made of curvilinear form, and in several parts jointed on a common centre. The pins may be placed either on the concave side of the apparatus, as shown, or on the convex side, according to the form to be reproduced, and the pins may be either acted on by independent springs, or one spring may serve for a series of pins, as before described.

Figures 6 and 7 show detailed views on a larger scale of the independent spring arrangement, and Figure 8 similar views of the other arrangement, in which several pins are operated by the same spring.

The reference letters apply to all the Figures.

Clark's Improved Apparatus for Taking the Shape or Profile of the Head.

A, spring pin; and B, its spring, which may be of spiral or other form attached to pin A, and enclosed in an independent sheath C. The sheaths for the whole of the pins are fitted at regular distances apart in the box H. D, blocks placed between the pins A, by which the said pins are clamped or locked securely in any position they may assume after being placed on the surface to be copied by means of a binding screw E mounted on the outside of the box H, whose pressure is thus applied simultaneously to the whole series of pins; G, Figure 2, spring or elastic cord attached to the heads of the whole series of pins, which are held in the desired position by means of screw E and blocks D, as before. This single spring arrangement is especially applicable when a small number of pins are used, but if independent springs are used the pins may be in any desired number. H, box containing the springs and the pins, which project through one side, as shown.

SPECIFICATION in pursuance of the conditions of the Letters Patent, filed by the said Alexander Melville Clark in the Great Seal Patent Office on the 28th March 1874.

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, ALEXANDER MELVILLE CLARK, of 53, Chancery Lane, in the County of Middlesex, Patent Agent, send greeting.

WHEREAS Her most Excellent Majesty Queen Victoria, by Her Letters Patent, bearing date the Twenty-ninth day of September, in the year of our Lord One thousand eight hundred and seventy-three, in the thirty-seventh year of Her reign, did, for Herself, Her heirs and successors, give and grant unto me, the said Alexander Melville Clark, Her special licence that I, the said Alexander Melville Clark, my executors, administrators, and assigns, or such others as I, the said Alexander Melville Clark, my executors, administrators, and assigns, should at any time agree with, and no others, from time to time and at all times thereafter during the term therein expressed, should and lawfully might make, use, exercise, and vend, within the United Kingdom of Great Britain and Ireland, the Channel Islands, and Isle of Man, an Invention for "IMPROVED APPARATUS FOR TAKING THE SHAPE OR PROFILE OF THE HEAD AND OTHER PARTS OF THE HUMAN FRAME, AND FOR REPRODUCING OTHER CURVED OR IRREGULAR OUTLINES," a communication to me from abroad by André

Dragué, of Lyons, France, upon the condition (amongst others) that I, the said Alexander Melville Clark, my executors or administrators, by an instrument in writing under my, or their, or one of their hands and seals, should particularly describe and ascertain the nature of the said Invention, and in what manner the same was to be performed, and cause the same to be filed in the Great Seal Patent Office within six calendar months next and immediately after the date of the said Letters Patent.

NOW KNOW YE, that I, the said Alexander Melville Clark, do hereby declare the nature of the said Invention, and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement, reference being had to the accompanying Sheet of Drawings, and to the letters and figures marked thereon (that is to say) :—

This Invention relates to improved apparatus which may be termed a mechanical mould or templet for taking, preserving, and reproducing the configuration or profile of all kinds of figures or objects having irregular surfaces, either sunk or in relief.

In many branches of industry and the arts it is often necessary to take patterns or counterparts of the outlines or configuration of figures or objects with great exactness, either with a view of preserving or reproducing the same therefrom, or for checking the correctness of such reproduction. In the arts, for example, in statuary and ornamental sculpture this is done by drawings, which however satisfactory are far from attaining the perfection ensured by the employment of an instrument which will gauge or take a counterpart or pattern of the human form, and retain the same for future use.

Again, in certain manufactures it is often requisite to speedily obtain a counterpart or pattern, in order that the article to be produced may adapt itself accurately to the part on which it is to be applied. For example, a mechanical orthopedist required to apply one of his ingenious apparatus to one or other part of the human frame, which he cannot always have before him as a guide, might dispense with repeated trials were he able to obtain by means of a suitable instrument an exact counterpart of the limb or part to which the mechanical contrivance is to be applied.

The wig maker also, who is required to provide an exact imitation of nature, would be enabled to operate with the greatest accuracy and

facility with the assistance of an instrument capable of taking and preserving a counterpart of the configuration of the head at different points, so as to produce a sort of skeleton mould without the necessity of actually moulding and its accompanying inconveniencies.

The above are only two out of many applications which might be adduced to show the utility of an apparatus such as that forming the subject of the present Invention.

This Invention comprises a whole series of apparatus, which may differ from one another as regards their general form and dimensions, but have one main feature in common, namely, a number of pins or rods pressed outwards by springs from a box or case in which they are placed, but free to be compressed or recede under a pressure sufficient to overcome that of the spring or springs, and to return to position when the pressure is removed, unless fixed by means of binding screws in any position which they may be caused to assume. Thus, a line or surface formed by the ends of these spring pins on being pressed against a relief surface or variable contour will be depressed at all projecting points until the pins corresponding to the concave parts of the surface come in contact therewith; then by securing the pins in their new position and removing the apparatus an exact counterpart of the surface or contour of the object on which the apparatus has been applied will be formed by the ends of the pins, and may be retained any length of time for future use.

In order that the Invention may be more readily understood I have illustrated in the accompanying Drawings one or two forms of the apparatus by way of example.

Figure 1 shows one form of apparatus suitable for taking a counterpart of curved outlines and surfaces in relief, consisting of a box of straight form with any convenient number of projecting pins, each provided with an independent spring.

Figure 2 shows a similar apparatus, in which one spring only is used for a set of several pins, or the whole of the pins may be acted on by the same spring.

Figure 3 shows a section of an ornamental moulding, and the manner of gauging the profile of same by means of the apparatus.

Figure 4 shows the apparatus made in two parts, jointed together for gauging or taking a counterpart of a concave moulding.

Clark's Improved Apparatus for Taking the Shape or Profile of the Head.

Figure 5 shows the apparatus made of curvilinear form, and consisting of several branches jointed on a common centre. The pins may be placed either on the concave side of the apparatus, as shown, or on the convex side, according to the form to be reproduced, and the pins may either be acted on by independent springs, or one spring may serve for a series of several pins, as before described.

Figures 6 and 7 show detailed views on a larger scale of the independent spring arrangement, and Figure 8 similar views of the other arrangement, in which several pins are operated by the same spring.

The reference letters apply to all the Figures.

A, spring pin; and B, its spring, which may be attached to pin A, and enclosed in an independent sheath C. The sheaths for the whole of the pins are fitted at regular distances apart in the box H. D, blocks placed between the pins A, by which they are clamped or locked securely in any position they may assume, after being placed on the surface to be copied by means of a binding screw E, whose pressure is by this means applied simultaneously to the whole series of pins; G, Figure 2, spring or elastic cord attached to the base of each pin of the series, the whole of which are held in the desired position by means of screw E and blocks D, as before described. This single spring arrangement is especially applicable when the extent to which the pins are required to move is inconsiderable, but if independent springs are used the extent of movement of the pins is only limited by their dimensions. H, box or frame of the apparatus containing the pins, which project through one side of said box, as shown. This box also encloses entirely the springs, blocks, and other parts for fixing or operating the pins, only the pins, the binding screws for fixing the same, and the joints of the box, if any, being visible outside the said box.

The box may be of any form or dimensions, and may be made in one or several parts connected together, the details of construction admitting of considerable variation, according to the object to which the apparatus is to be applied, and the same remark applies to the other parts of the apparatus, as the Invention consists not in the form or material employed, but in the combination and application of devices by which a series of independent movable points maintained by an elastic force, and

capable of yielding under slight pressure, and of being secured when so depressed are rendered available for the purposes before mentioned.

Having described the nature of the Invention and the manner of performing the same, I declare that what I claim as the Invention to be protected by the herein-before in part recited Letters Patent is, the apparatus consisting of a hollow bar or box (or several such jointed together) of convex, concave, or other form, fitted with one or more series of spring pins or pegs capable of receding or yielding under sufficient pressure, and of being secured by series in any position they may be caused to assume, for the purpose of obtaining at the points of the pins an exact counterpart of the contour or profile of any object, figure, or thing having surfaces, either sunk or in relief, substantially as herein-before shown and described.

In witness whereof, I, the said Alexander Melville Clark, have hereunto set my hand and seal, this Twenty-seventh day of March, in the year of our Lord One thousand eight hundred and seventy-four.

A. M. CLARK. (L.S.)

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CLARK'S Provisional Specification.

FIG. 6.

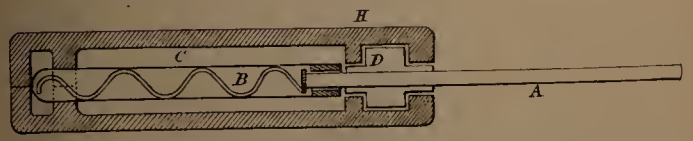

FIG. 7.

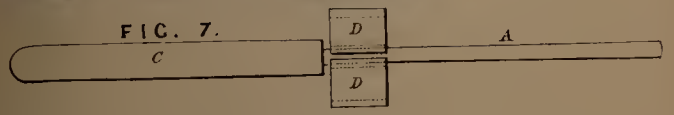

FIG. 1.

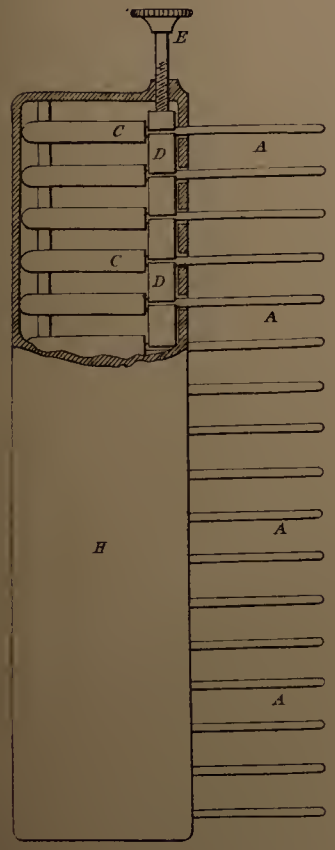

FIG. 7.

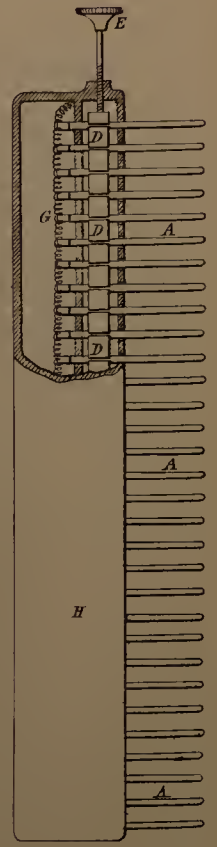

FIG. 3.

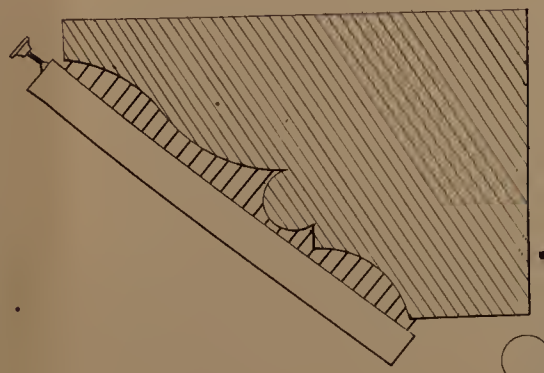

FIG. 4.

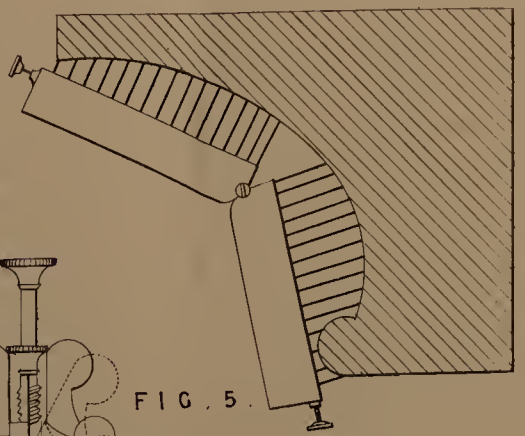

FIG. 5.

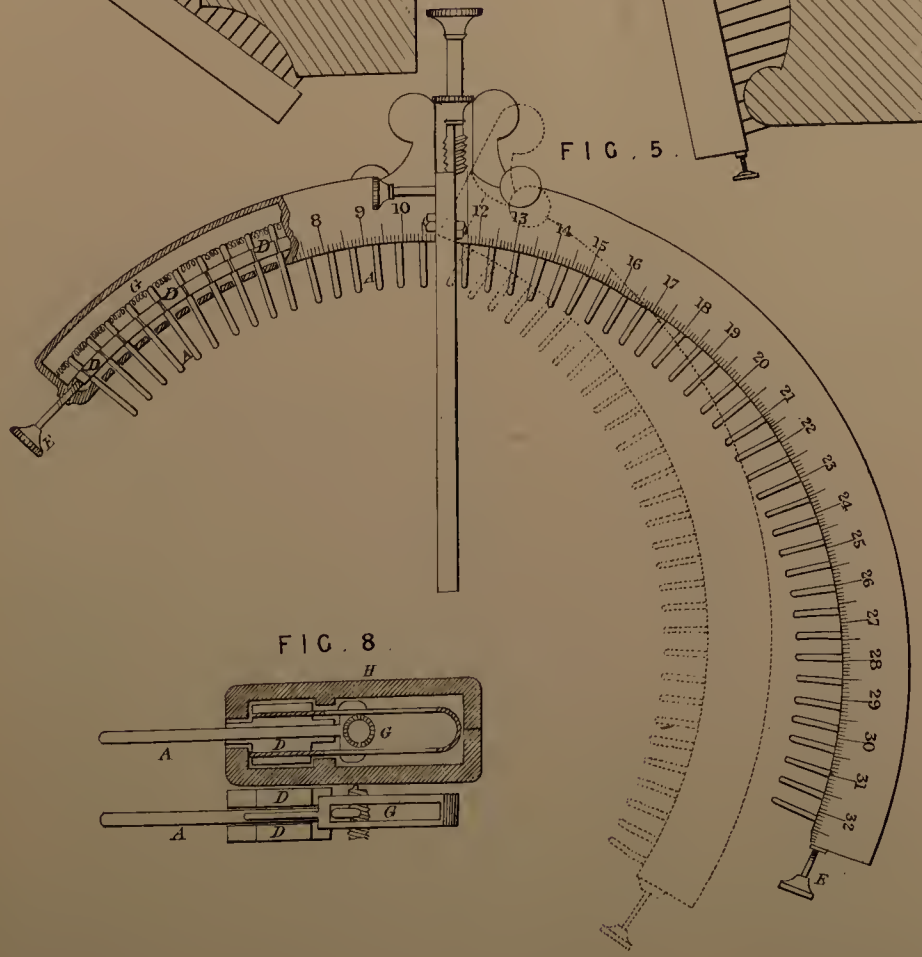

FIG. 8.

The drawing left with Provisional Specification is not colored.

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CLARK'S Specification.

FIG. 6.

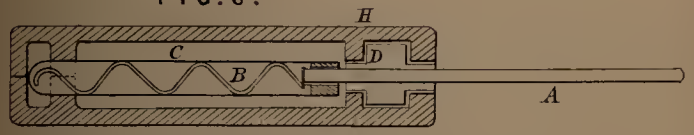


FIG. 7.

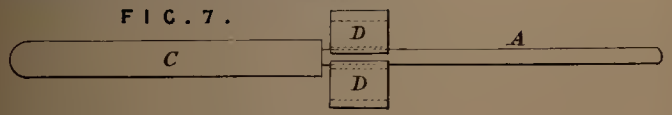


FIG. 1.

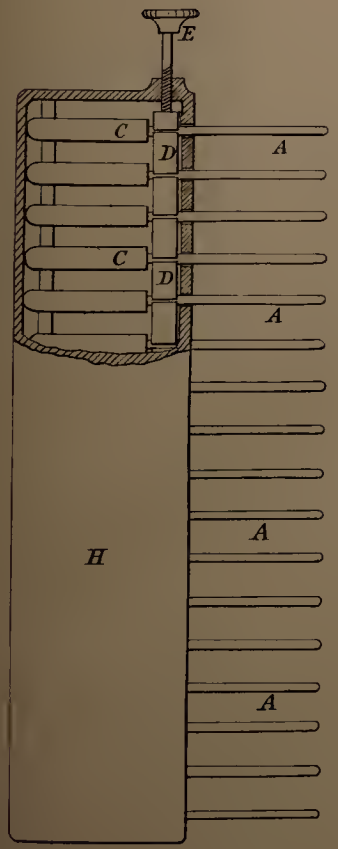


FIG. 2.

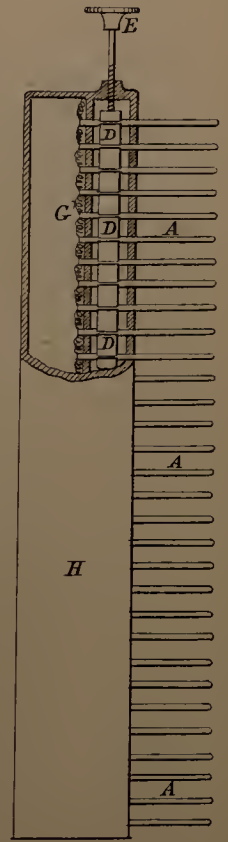


FIG. 3.

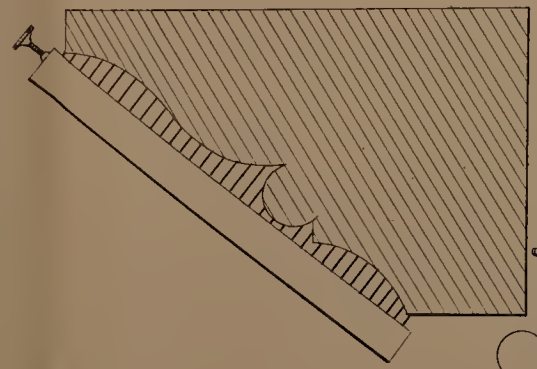


FIG. 4.

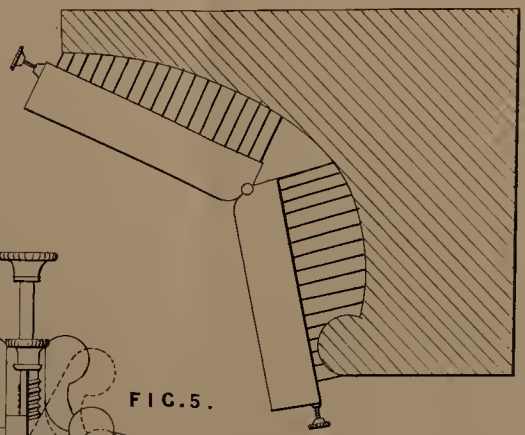
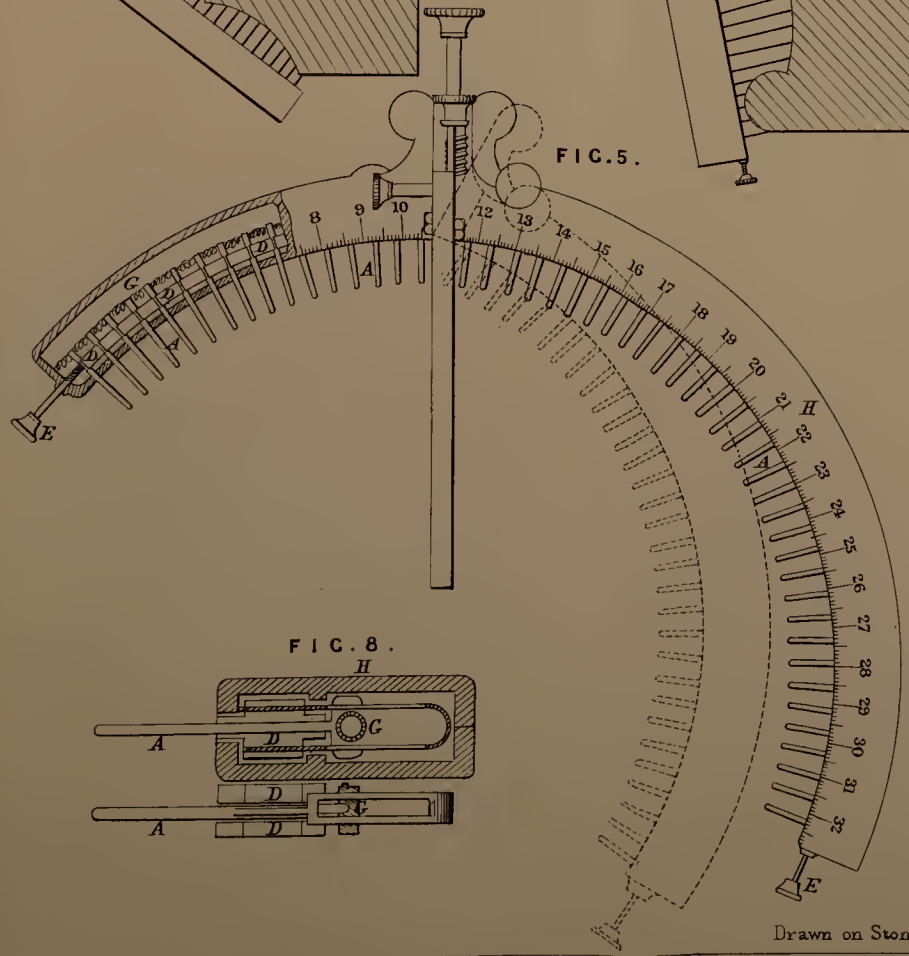


FIG. 5.



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